LESSON PLAN

PART I
COVER SHEET

LESSON TITLE: Mission-Oriented Protective Postures (MOPP)

TRAINING METHOD: Lecture

ORGANIZATIONAL PATTERN: Topical

REFERENCES: AFMAN 32-4005, Personnel Protection and Attack Actions
AFVA 32-4012, Mission-Oriented Protective Postures

AIDS AND HANDOUTS: Attachment 1. MOPP Summary
Attachment 2. Hydration Standards (Quarts Per Hour) For People in MOPP 3 and 4
AFVA 32-4012, Mission-Oriented Protective Postures (MOPP)

LESSON OBJECTIVE: Given a lecture on mission-oriented protective postures, the student, during the final course exam, must correctly answer questions that demonstrate understanding of at least 3 of the samples of behavior listed below:

SAMPLES OF BEHAVIOR:

1. State who has the authority to direct mission-oriented protective postures.

2. Identify the MOPP levels and the protective equipment worn in each level.

3. State the three standard MOPP variations/options.

4. Identify water intake standards that must be followed for people in MOPP 3 and 4.

5. Identify procedures used for emergency personal relief.

SUGGESTED COURSE(S) OF INSTRUCTION: NBC Defense Training

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STRATEGY: This lecture presents basic principles of MOPPs that students must understand for the system to operate. Stress to the students that MOPP levels are used only when a nuclear, biological or chemical threat exists. The first main point explains who has the responsibility and authority to make MOPP decisions. This point stresses the student's responsibility to simply do what they are told.

Next, cover the relationship between MOPP levels and individual protective equipment (IPE) associated with each level. It's important to explain that MOPP levels don't necessarily progress from 0 to 4 (or to MOPP Alpha), but may go in any order directed by the commander. Since this lesson depends on the student's understanding of IPE and alarm signals, the RTPs for these subjects should be taught prior to this lesson.

LESSON OUTLINE:

MAIN POINT 1. MOPP RESPONSIBILITIES
- a. Installation Commander's Responsibilities
- b. Unit Commander's and Staff Agency Chief's Responsibilities
- c. Individual's Responsibilities

MAIN POINT 2. MOPP LEVELS
- a. MOPP 0
- b. MOPP 1 and 2
- c. MOPP 3 and 4
- d. MOPP Alpha

MAIN POINT 3. MOPP VARIATIONS
- a. Mask Only Option
- b. No-Fatigues Option
- c. Ventilation Option

MAIN POINT 4. MOPP LEVELS WITH ALARM CONDITIONS

MAIN POINT 5. REST TIMES

MAIN POINT 6. WATER INTAKE
- a. Water Loss
- b. Dehydration
- c. Water Replacement

MAIN POINT 7. EMERGENCY PERSONAL RELIEF PROCEDURES
- a. Overgarment
- b. Toilet/Cathole
- c. Procedures

PART II
TEACHING PLAN

INTRODUCTION

ATTENTION:

You've just heard an announcement over the base public address system stating, "Alarm Red-MOPP 4." What are you going to do? What does this mean to you?

MOTIVATION:

Understanding what Mission Oriented Protective Postures (MOPP) levels are, and what protective clothing is to be worn with each level will make the difference between life and death in a contaminated environment.

OVERVIEW:

We will present the principles of the MOPP system that you must know to survive and operate in a nuclear/biological/chemical (NBC) environment. We will discuss:

1. MOPP responsibilities
2. MOPP Levels
3. MOPP Variations
4. MOPP Levels with Alarm Conditions
5. Rest Times
6. Water Intake
7. Emergency Personal Relief Procedures

TRANSITION:

Let's get started by explaining various responsibilities.

BODY

MAIN POINT 1: MOPP RESPONSIBILITIES

The MOPP system is used when a NBC threat exists. It creates a balance between the thermal burden of individual protective equipment (IPE), mission urgency, and protection requirements.

a. INSTALLATION COMMANDER

The installation commander is responsible for directing MOPP levels and variations. The installation commander bases MOPP decisions on the mission, the local situation, intelligence, and higher headquarters requirements provided through command and theater alerting systems.

1) MOST PROTECTION, LEAST RISK

Installation commanders have flexibility in using the MOPP system. Limited flexibility is allowed to provide the most protection at the least risk, while allowing mission accomplishment.

2) COMMANDER DETERMINES MOPP

The commander decides on and implements the appropriate levels of protection through the use of six MOPP levels (MOPP 0 through 4 and MOPP Alpha) and authorizes certain variations from these standard protective postures.

3) WEIGH RISKS

The commander weighs the risks of NBC attacks against the thermal burdens caused by IPE when making MOPP decisions.

b. UNIT COMMANDER & STAFF AGENCIES

Your own unit commander or staff agency chief has responsibilities also. Let's look at those.

1) IMPLEMENT DIRECTED MOPP

Implement MOPP levels directed by the installation commander.

2) EVALUATE VARIATIONS

Evaluate MOPP variations authorized by the installation commander and use the variations within the unit if needed.

3) WORK ROTATIONS

Establish procedures to help personnel control heat build-up through work-rest cycles.

4) HYDRATION STANDARDS

Maintain/enforce hydration standards within the unit.

5) EXERCISE

Ensure unit personnel are trained on the use of MOPP levels and variations in relation to their specific duties. This training must be practiced during NBC attack response exercises and during NBC defense training programs.

c. INDIVIDUAL RESPONSIBILITIES

It's your responsibility to know how to wear your IPE according to directed MOPP levels and authorized variations and to be able to counter adverse effects caused by MOPPs.

INSTRUCTOR NOTE: Use AFVA 32-4012 to help teach MOPP levels.

MAIN POINT 2:
MOPP LEVELS

As mentioned earlier, there are six standard MOPP levels, MOPP 0 through MOPP 4 and MOPP Alpha. The level of protection increases as the MOPP numbers increase (MOPP Alpha is used under special conditions). However, the progression doesn't necessarily go sequentially. For example, you may go from MOPP 0 to MOPP 2, then directly to MOPP 4. It all depends on the threat.

a. MOPP 0

MOPP 0 is used during periods of increased alert when the enemy has a NBC warfare capability, but NBC warfare has not begun and there is no indication of its use in the immediate future.

1) ISSUED BUT NOT WORN

In MOPP 0, protective equipment is issued but not actually worn. It is, however, kept readily available, usually within 5 minutes of where you are.

a) GCE

The overgarment is kept in its sealed bag until needed.

b) FIELD GEAR

Depending on other conditions, the commander may require you to wear your field gear (that is, helmet, web belt and canteen.)

c) TIME TO DON ALL GEAR

The time needed to don all of your protective equipment is about 8 minutes while in MOPP 0.

b. MOPP 1 AND 2

IF a NBC attack is possible, the commander may direct either MOPP 1 or 2.

1) MOPP 1

Automatically assume the minimum MOPP 1 when Alarm Condition Yellow is declared, unless otherwise directed.

a) GCE

The overgarment is worn, and you either carry other individual protective equipment items or keep them close at hand for immediate use. The mask carrier is strapped on and the gloves are placed in the GCE pocket.

b) FIELD GEAR

All field gear is worn at this time. Begin to increase water consumption and fill canteen at every opportunity.

c) PRESCRIPTION EYE WEAR

If you wear contact lenses, you must remove them at this time. If you need corrective vision, you should use the proper spectacle inserts for your mask.

d) TIME TO DON ALL GEAR

While in MOPP 1, the time needed to don the remainder of your protective equipment is reduced by half, from 8 to 4 minutes.

2) MOPP 2

The commander may decide to use MOPP 2 instead of MOPP 1.

a) GCE	The overgarment and protective footwear covers is worn. The mask carrier is strapped on and the gloves are placed in the GCE pocket.
b) FIELD GEAR	All field gear is worn at this time. Begin to increase water consumption and fill canteen at every opportunity.
c) TIME TO DON ALL GEAR	The time needed to don remaining protective equipment is less than one minute.
c. MOPP 3 AND 4	MOPPs 3 and 4 are used when CB contamination is known or expected.
1) MOPP 3	MOPP 3 allows increased dexterity while you perform essential tasks, but has limited application and should not be used if liquid agent contact is possible or blister agent vapors are present. Generally, MOPP 3 is used inside buildings where CB agent contact is minimal.
a) GCE	All individual protective equipment items, except the gloves are worn. The gloves are kept readily available at all times.
b) FIELD GEAR	All field gear is worn. Continue increased water consumption. Practice good contamination avoidance procedures.

c) SUBSEQUENT ATTACKS	If an attack occurs while in MOPP 3, immediately don gloves. After attack, remain in MOPP 4 unless specifically authorized to go to MOPP 3 again. Never assume MOPP 3 without specific authorization.
2) MOPP 4	This is the highest of the MOPP levels and provides the best protection. In MOPP 4, unless the commander indicates otherwise, automatically assume MOPP 4 during Alarm Conditions Red or Black.
a) GCE	All protective equipment is worn.
b) FIELD GEAR AND BUDDY CARE	Observe hydration standards. Ensure your 'buddies' drink plenty of water. Assist each other with lowering hoods and connecting/ disconnecting drinking tubes. Practice good contamination avoidance procedures.
c) HIGHER HEALTH RISKS	In MOPP 4, vision and communications are restricted, efficiency decreases, and there is a greater risk of heat stress and dehydration.
d. MOPP ALPHA	MOPP Alpha is used under special conditions when a vapor hazard exists and there is a no skin contact hazard.

a) PURPOSE	MOPP ALPHA is a POST-Attack MOPP Level. It provides respiratory protection and limited skin protection. Generally, MOPP Alpha is used inside a protected environment (i.e. inside buildings) or when there is a limited vapor hazard, or a biological or nuclear fallout hazard. It should not be used if liquid agent contact is possible or blister agent vapors are present. MOPP Alpha should only be implemented after a post-attack assessment has been made.
b) GCE	The mask, gloves, and BDUs are worn. The overgarment and footwear covers are carried and are kept readily available at all times. Currently MOPP Alpha is only good for the GCE. It will not work with the JS-LIST.
c) FIELD GEAR	All field gear is worn. Continue increased water consumption. Practice good contamination avoidance procedures.
d) SUBSEQUENT ATTACKS	If an attack occurs while in MOPP Alpha, immediately go to MOPP 4. After attack, remain in MOPP 4 unless specifically authorized to go to MOPP Alpha again. Never assume MOPP Alpha without specific authorization.

MAIN POINT 3.
MOPP VARIATIONS

To help counter the problems MOPP levels present, the commander can authorize certain MOPP variations or "options". However, the use of variations depends on the situation. The three standard options are:

- mask only option
- no-fatigues option
- ventilation option

Each of these options imposes a greater degree of risk than the basic MOPP. Factors affecting a commander's decision to use these options include:

- the type of hazards present or expected
- temperature
- work rate
- immediacy of the threat
- and mission needs

a. MASK ONLY OPTION

The commander authorizes the mask only option when people are protected from direct liquid chemical warfare agents and blister agent vapor exposure. To comply with this option, the only items that you need to wear are the mask, hood, and a long sleeve duty uniform.

Examples of areas where this option may be used include the interior of buildings, vehicles, and aircraft.

You should be aware that since some blood and nerve agent vapors are absorbed through the skin. The possibility of exposure to incapacitating concentrations, while low, still exists.

b. NO-BDU OPTION

The no-BDU option, allows you to wear the overgarment directly over your underwear.

1) USED WHEN HEAT STRESS A SIGNIFICANT FACTOR

It is only used when heat stress is expected to be a significant factor. This allows more work to be performed, in the short term, by reducing the thermal burden.

Since this variation increases the risk of skin contamination, it should never be used unless absolutely necessary for mission accomplishment.

Casualty rates, depending on the agent type and the amount transferred to the skin, will increase. People processing into the toxic-free area could bring in higher levels of contamination.

Never use this option with an overgarment that was previously contaminated by a liquid agent.

c. VENTILATION OPTION

The ventilation option allows you to open your overgarment jacket. This aids ventilation and reduces thermal build-up while in MOPP levels 1 and 2.

1) AMOUNT OF WARNING IS A DETERMINING FACTOR

The amount of warning expected before a CB attack is a determining factor for using this variation.

The commander may also authorize this option during MOPP levels 3 and 4 if liquid contamination or blister agent vapors are not present and the duty uniform is worn under the overgarment.

The ventilation option is automatically revoked with each MOPP level increase, unless specifically reauthorized by the commander.

Use of the ventilation option involves risk because chemical vapors can be absorbed through the skin and may, in sufficiently high concentrations or over a period of time, cause casualties.

When chemical agents are present, the commander limits ventilation periods to the minimum amount of time needed for heat relief.

TRANSITION:

MOPP levels are simply a system that can be communicated quickly and concisely. Next, we will discuss the relationship between MOPP levels and alarm signals.

MAIN POINT 4.
MOPP LEVELS WITH ALARM CONDITIONS

INSTRUCTOR'S NOTE: Use Attachment 1, in Part IV (MOPP Summary) to show the relationship between MOPP levels and the alarm signals for areas subject to nuclear, biological, and chemical attacks.

MAIN POINT 5.
REST TIMES

It's no secret that wearing IPE will cause added thermal burden. Also, the harder you work, the quicker body heat will build, and the sooner you'll get tired. Therefore, rest periods are essential to reducing body heat.

INSTRUCTOR'S NOTE: Refer to AFMAN 32-4005 for more information on work/rest cycles.

Heat-stressed individuals can't adequately assess their own condition and may require supervisory direction. Commanders and supervisors are responsible for determining the estimated rest times needed to recover from heat buildup in MOPP 3 and 4.

Additionally, you need to be aware of your own limitations and at the same time watch out for coworkers who may become too hot or exhausted.

MAIN POINT 6. WATER INTAKE

Another problem associated with heat buildup is dehydration. Each of us is responsible to ensure we drink enough water to prevent dehydration.

INSTRUCTOR'S NOTE: Use Attachment 2, in Part IV, (Hydration Standards) to discuss required water intake.

a. WATER LOSS

The human body depends on water to cool itself in a hot environment. In MOPP 4, you can lose more than one quart of water each hour. Therefore, it's necessary to replace the water loss on a continual basis.

b. DEHYDRATION

Water consumption must be stressed because dehydration is a serious work degradation factor. Dehydration can occur long before you become thirsty.

c. WATER REPLACEMENT

Unless you're in cool temperatures, drink water even if you are not thirsty, because thirst alone will not ensure adequate water intake. Before beginning work, you should drink one-half to one quart of water.

Drink cool water and avoid sugary soft drinks and electrolyte solutions except under medical advice. Also, limit coffee, tea, and soft drinks containing caffeine, since they are a diuretic and contribute to dehydration.

MAIN POINT 7. EMERGENCY PERSONAL RELIEF PROCEDURES

Although it may sound funny, if you need to use the restroom while in a contaminated environment, you must follow certain emergency personal relief procedures to reduce the chance of contamination.

a. OVERGARMENT

2) You should relieve yourself before departing a toxic-free area. If absolutely necessary, you can relieve yourself inside the overgarment and change it as soon as possible.

b. TOILET/CATHOLE

You may relieve yourself in a contaminated environment without soiling the overgarment. In this instance, you should use either a toilet or cathole.

1) TOILET

Try to use a toilet located in a facility protected from liquid agent contamination. Squat above, rather than sit on the toilet fixture to help avoid contamination transfer.

2) CATHOLE

You may consider using a "cathole" (for depositing and burying body waste) if a toilet is not available.

- If you must use a cathole, avoid low areas and areas with heavy brush.
- Scrape away the surface area at least 2 inches deep and large enough for yourself and personal equipment. Dig a hole about 1 foot deep in the cleared area.

c. PROCEDURES

Regardless of whether you use a toilet or a cathole, the procedures are the same.

- First, decontaminate your gloves with your decontamination kit.
- Unsnap the back snaps on your overgarment and pull up your overgarment jacket by the bottom, folding it back on itself once, enough to expose your overgarment pants. Do not touch the inner surface of your overgarment with your rubber gloves.
- Decontaminate your gloves again, if necessary.

- Unsnap and unzip your overgarment pants, and carefully peel them down as far as necessary.

- Carefully remove your rubber gloves and set them nearby. Do not touch contaminated objects with your unprotected hands.

- Open and lower your underclothes, as necessary, and relieve yourself.

- When finished, pull your underclothing up.

- Put your gloves back on. Do not touch the outside of your gloves, which may be contaminated.

- Pull up your overgarment pants and refasten them.

- Pull your overgarment jacket down and refasten it.

- If a cathole was used, be sure to pack it with dirt.

CONCLUSION

SUMMARY: In summary, we have discussed:

1. MOPP responsibilities
2. MOPP levels and protective equipment
3. MOPP variations
4. MOPP levels with alarm conditions
5. Rest times
6. Water intake
7. Emergency personal relief procedures

REMOTIVATION: Now that you understand the MOPP system; when you hear the words, “Alarm Red, MOPP 4,” you will know what it means and what to do to survive.

CLOSURE: With MOPP levels, you can survive and operate in a CB environment. This concludes this lesson.

TRANSITION: (Develop locally to transition to the next topic.)

PART III
EVALUATION
STUDENT PERFORMANCE STANDARDS

TEST ITEMS

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1. LESSON OBJECTIVE: State who has the authority to direct mission-oriented protective postures.

QUESTION: (Multiple Choice)

The person with the authority to select mission-oriented protective postures is:

a. the unit commander or staff agency chief
b. the installation commander
c. the work center supervisor
d. each individual

KEY: b

REFERENCE: Main Point 1.

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2. LESSON OBJECTIVE: Identify the MOPP levels and the protective equipment worn in each level.

QUESTION: (Matching)

Match the MOPP level in COLUMN A with the type of equipment worn from COLUMN B.

COLUMN A	COLUMN B
1. MOPP 0_____	a. Overgarment, overboots, mask/hood and helmet only
2. MOPP 1_____	b. Field Gear
3. MOPP 2_____	c. Overgarment and overboots only
4. MOPP 3_____	d. Overgarment only
5. MOPP 4_____	e. Overgarment, overboots, mask/hood, gloves, and helmet only
6. MOPP A_____	f. Mask/hood and gloves only

KEY: 1b; 2d; 3c;4a;5e,6f

REFERENCE: Main Point 2

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3. LESSON OBJECTIVE: State the three MOPP variations.

QUESTION: (Multiple Choice)

Which of the following is NOT an authorized MOPP variation?

a. indoor option.
b. mask only option.
c. ventilation option.
d. no-BDU option.

KEY: a

REFERENCE: Main Point 3.

4. LESSON OBJECTIVE: Identify water intake standards that must be followed for people in MOPP 3 and 4.

QUESTION: (True or False)

Before beginning work in protective equipment, individuals should drink one-half to one quart of water.

a. True
b. False

KEY: a

REFERENCE: Main Point 6

5. LESSON OBJECTIVE: Identify procedures used for emergency personal relief.

QUESTION: (True or False)

In a contaminated environment, people may relieve themselves by using a toilet located in a facility protected from liquid agent contamination or by using a cathole if a toilet is not available.

a. True
b. False

KEY: a

REFERENCE: Main Point 7

PART IV
RELATED MATERIALS

Attachment 1. Mission-Oriented Protective Postures (MOPP) Summary

Attachment 2. Hydration Standards (Quarts Per Hour) For People in MOPP 3 and 4

RTP C5 - USAF Alarm Signals and Actions

RTP C9 - M17A2 (X-Small) Protective Mask and Accessories

RTP C10 - MCU-2/P Series Mask and Accessories

RTP C11 - Groundcrew Chem-Defense Ensemble (GCE)

Mission-Oriented Protective Postures (MOPP) Summary

MOPP	Used in Alarm	Over-garment is	Helmet is	Foot-wear covers are	Mask and hood are	Other IPE is (Note)	Gloves and inserts are	Variations are
0	All Clear	Readily Available						N/A
1	Yellow	Worn		At Hand or Carried				-No BDU -Ventilation -Mask Only
2	Yellow	Worn			At Hand or Carried			-No BDU -Ventilation -Mask Only
3	Black	Worn					At Hand or Carried	-No BDU -Ventilation -Mask Only
4	Red	Worn						-No BDU -Mask Only
4	Black	Worn						-No BDU -No Ventilation -Mask Only
Alpha	Black	At Hand or Carried			Worn			N/A

NOTE: Field gear (web belt, canteen, helmet, etc.) may be worn in any MOPP Level.

MOPP LEVELS		
MOPP 0	**WEAR:**	***FIELD GEAR*** (HELMET, WEB BELT, CANTEEN)*(AS DIRECTED)*
	KEEP:	PERSONAL PROTECTIVE EQUIPMENT WITHIN 5 MINUTES
MOPP 1	**WEAR:**	FIELD GEAR, ***OVERGARMENT***
	CARRY:	*OVERBOOTS, MASK, GLOVES*
MOPP 2	**WEAR:**	FIELD GEAR, OVERGARMENT, ***OVERBOOTS***
	CARRY:	*MASK, GLOVES*
MOPP 3	**WEAR:**	FIELD GEAR, OVERGARMENT, OVERBOOTS, ***MASK***
	CARRY:	*GLOVES*
MOPP 4	**WEAR:**	FIELD GEAR, OVERGARMENT, OVERBOOTS, MASK, ***GLOVES***
MOPP	**WEAR:**	FIELD GEAR, MASK, HOOD, GLOVES
ALPHA	**CARRY:**	*OVERGARMENT, OVERBOOTS*

HYDRATION STANDARDS (QUARTS PER HOUR)
FOR PEOPLE IN MOPP 3 AND 4 (NOTE 1)

WORK RATE	AIR TEMPERATURE			
	60-69F 16-20C	70-79F 21-26C	80-89F 27-31C	90-99F 32-37C
LIGHT	NOTE 2	0.5	1	1-2
MODERATE	1-2	1-2	NOTE 3	NOTE 3
HEAVY	1-2	NOTE 3	NOTE 3	NOTE 3

NOTES:

1. People must be encouraged to drink the amount of water indicated in the table even if not thirsty, because thirst alone will not ensure adequate water intake. Before beginning work in protective equipment, drink one-half to one quart of water. Cool water is the drink of choice. Avoid sugary soft drinks and electrolyte solutions except under medical guidance. Also, limit coffee or soft drinks containing caffeine because caffeine is a diuretic.

2. At cooler temperatures, dehydration is not the performance limiting factor. Thirst may govern intake.

3. Under these more severe conditions, heat stress, will usually limit performance before dehydration becomes a serious problem. Water intake during work will not prolong work periods. Re-hydration during rest periods is very important.

TRAINING PACKAGE COMMENT REPORT

RTP # C12	RTP DATE 1 Oct 98

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